



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-7B26/3 (Research Measurement) BYPASS RATIO: 5.1
 UNIQUE ID NUMBER: 01P22FC001 PRESSURE RATIO (π_{co}): 27.7
 COMBUSTOR: Tech Insertion
 ENGINE TYPE: TF RATED THRUST (F_{oo}) (kN): 117.0

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F _{oo} (g/kN) or SN	3.5	51.9	48.8	
AS % OF ORIGINAL LIMIT	18.0	44.0	51.1	
AS % OF CAEP/2 LIMIT (NO _x)			63.9	
AS % OF CAEP/4 LIMIT (NO _x)			77.0	
AS % OF CAEP/6 LIMIT (NO _x)			87.5	
AS % OF CAEP/8 LIMIT (NO _x)			104.0	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

DATA STATUS

x PRE-REGULATION
 - CERTIFICATION
 x REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
 - DEDICATED ENGINES TO PRODUCTION STANDARD
 x OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 x OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F _{oo})	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	1.213	0.00	0.53	22.90	
CLIMB OUT	85	2.2	0.986	0.00	0.54	17.68	
APPROACH	30	4.0	0.331	0.01	2.79	9.37	
IDLE	7	26.0	0.108	1.59	27.46	4.22	
LTO TOTAL FUEL (kg) or EMISSIONS (g)			429	269	4945	4923	-
NUMBER OF ENGINES				1	1	1	
NUMBER OF TESTS				3	3	3	
AVERAGE D _p /F _{oo} (g/kN) or AVERAGE SN (MAX)				2.3	42.3	42.1	
SIGMA (D _p /F _{oo} in g/kN, or SN)							
RANGE (D _p /F _{oo} in g/kN, or SN)							

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT All POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT All POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	96.6-96.9
TEMPERATURE (K)	294.7-302.9
ABS HUMIDITY (kg/kg)	0.0725-0.01011

FUEL

SPEC	Jet A
H/C	1.94
AROM (%)	17.7

MANUFACTURER: CFM International
 TEST ORGANIZATION: Empa
 TEST LOCATION: SR Technics, Zurich, Switzerland
 TEST DATES: 17/08/2013-18/08/2013

REMARKS

- Engine S/N 897-397
- Report "Non-volatile Particulate Matter Emissions Certification of a CFM56-7B26/3" May 2020
- NO_x, HC, CO Emissions are research data as part of world's first nvPM certification-like test
- Provided by Swiss Federal Office of Civil Aviation, Switzerland

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)